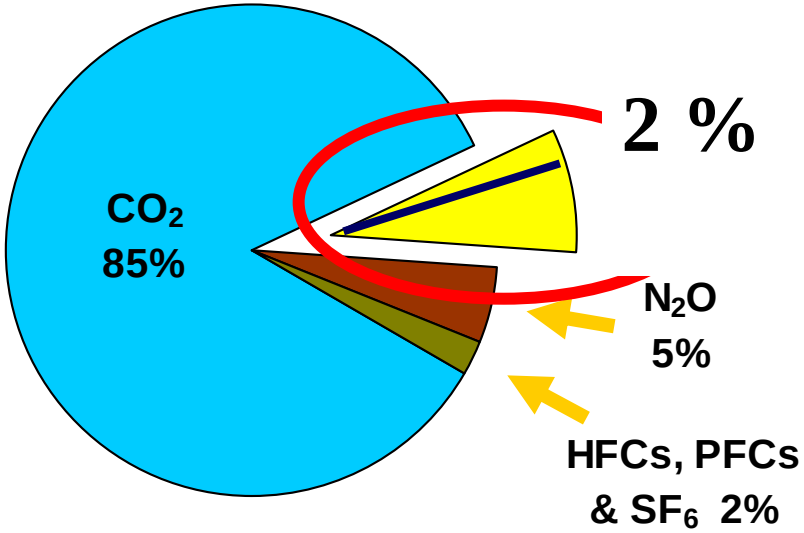
U.S. Environmental Protection Agency
Natural Gas STAR Program

Overview for Distribution Companies

Reducing Emissions
Increasing Efficiency
Maximizing Profits

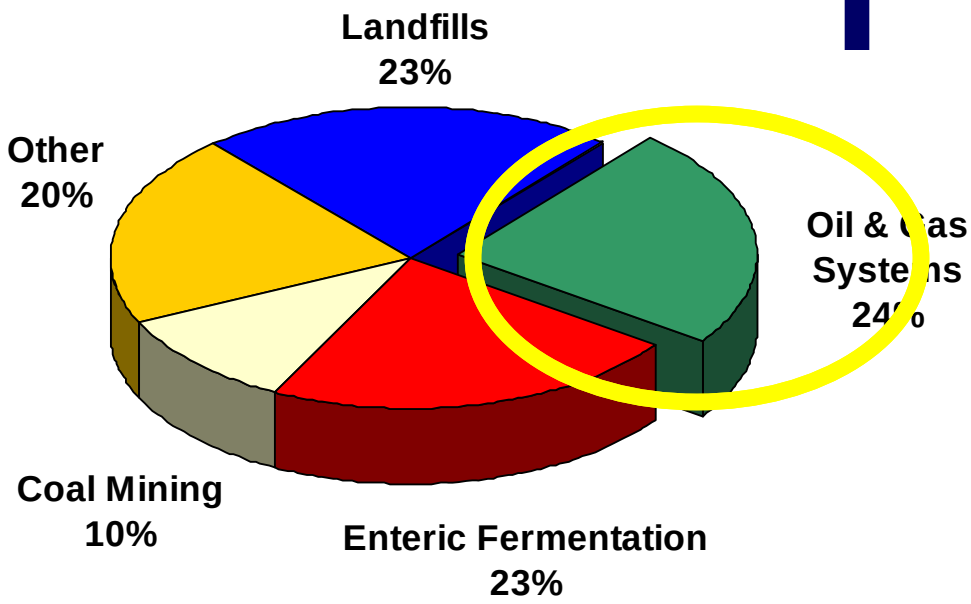
Background: U.S. Greenhouse Gas Emissions

U.S. Greenhouse Gas Emissions All Sources



Methane emissions from **Oil and gas systems** make up **2%** of **total** U.S. greenhouse gas emissions

U.S. Methane Emissions by Sector

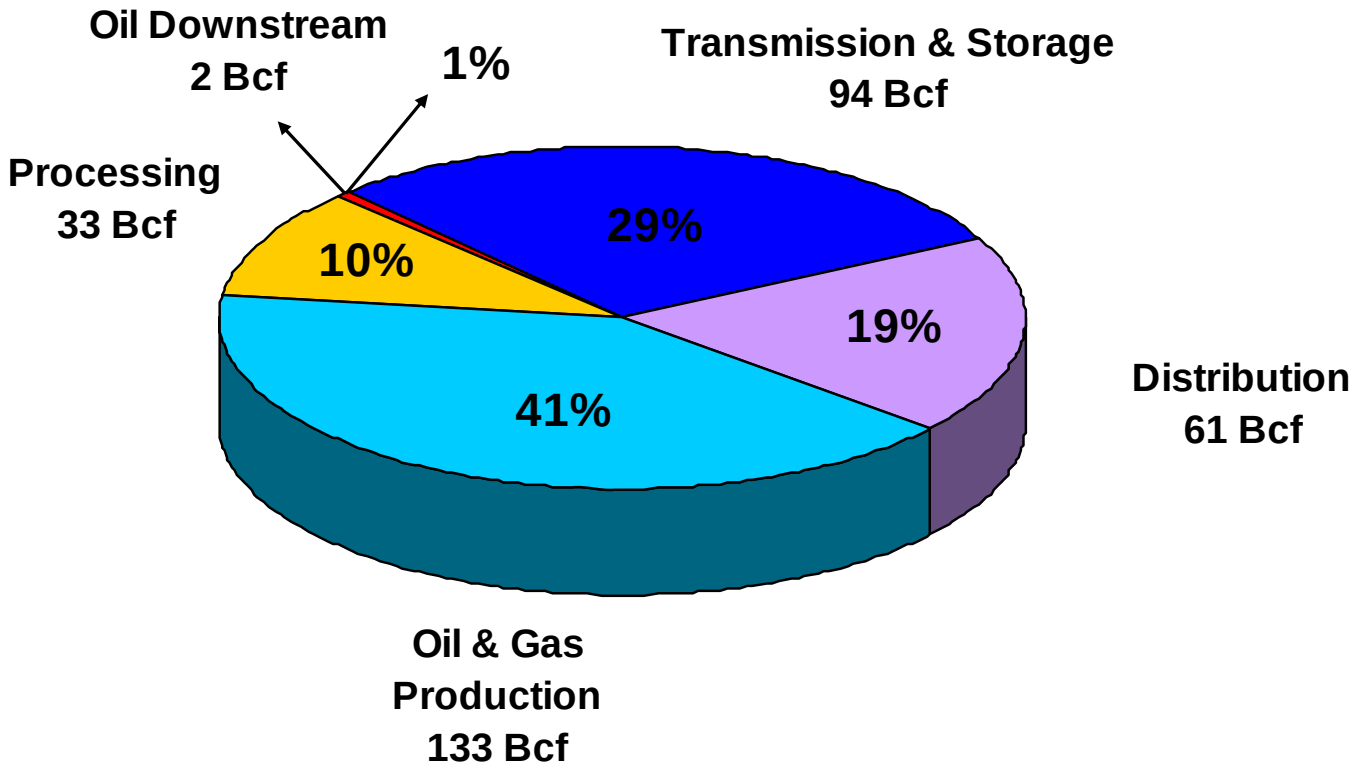


Oil and gas systems are the **largest** man-made source of methane emissions **(24%)**

Source: EPA. Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006. April, 2008.

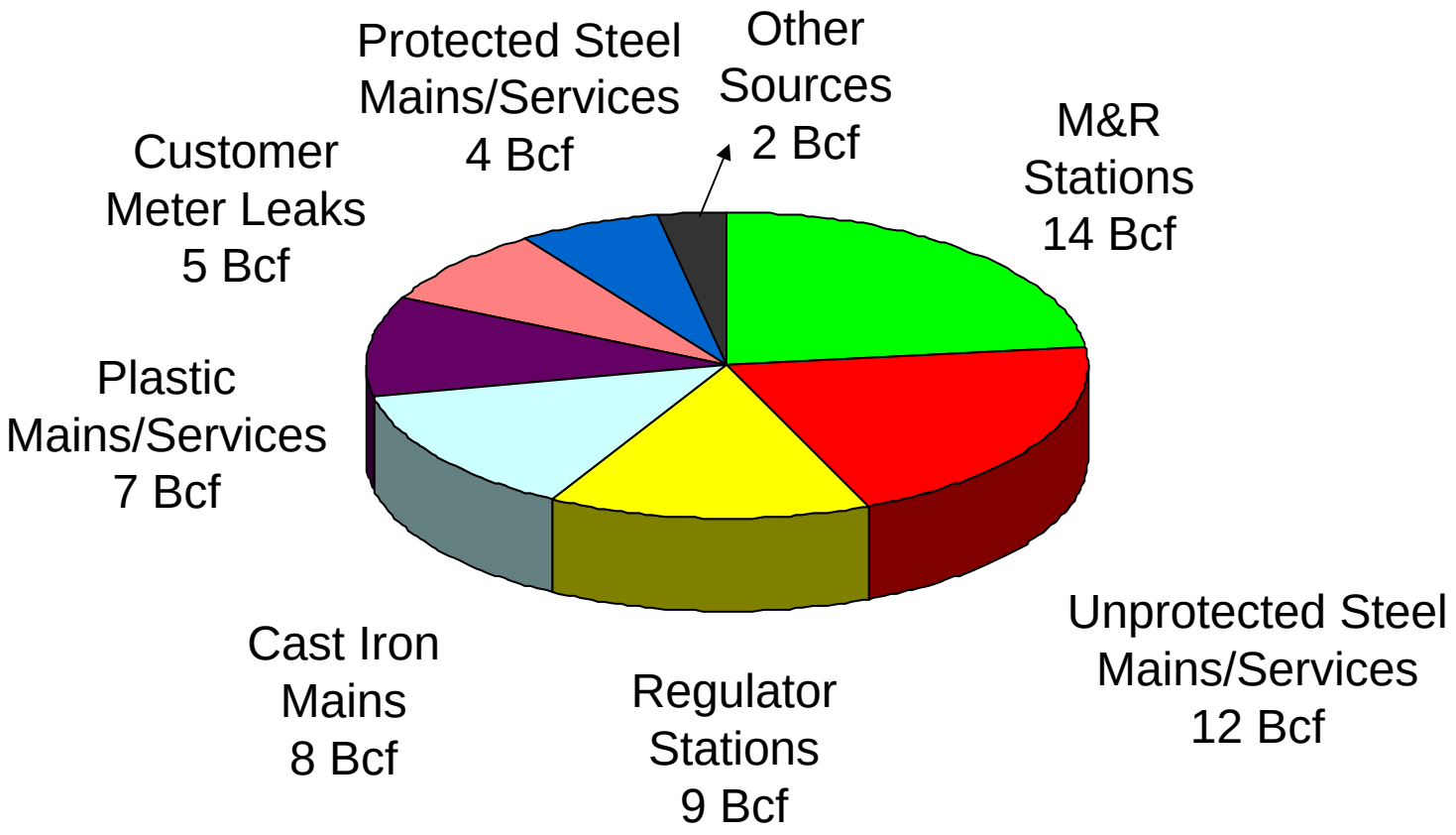
Background: U.S. Oil and Gas Methane Emissions by Sector

- 2006 U.S. methane emissions from oil and natural gas industry: 323 Bcf (2% of total U.S. greenhouse gas emissions)



Source: EPA. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006.* April, 2008.
Note: Natural Gas STAR reductions from gathering and boosting operations are reflected in the production sector.

Background: Distribution Sector Methane Emissions



Source: EPA. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2006.* April, 2008.
Natural Gas STAR reductions data shown as published in the inventory.

U.S. Oil & Natural Gas Opportunities: Why Gas STAR?

- **323 Bcf of methane emissions per year amounts to:**
  - $2.26B worth of gas lost (at $7/Mcf)
  - CO_2 emissions from the electricity use of 17.3 million homes for one year
  - Annual greenhouse gas emissions from 23.9 million passenger vehicles

- **U.S. oil and natural gas industry has an opportunity to cost-effectively reduce methane emissions resulting in:**
  - Increased operational efficiency
  - Increased profits
  - Increased domestic gas supply
  - Improved safety
  - Improved environmental performance
  - Better public relations

The Natural Gas STAR Program

The Natural Gas STAR Program is a ***flexible, voluntary partnership*** between EPA and the oil and natural gas industry designed to ***cost-effectively*** reduce methane emissions from oil and natural gas operations.

- **More Than 120 Partners:**
  For a complete listing of Natural Gas STAR partner companies and industry association endorsers, visit epa.gov/gasstar/partners/index.html

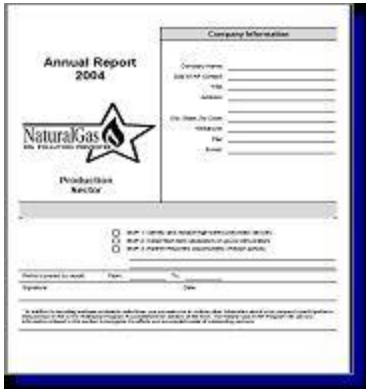
Key Components

- **Guidance on new technologies and practices**
  - Technical documents on more than 80 cost-effective technologies and practices
  - Free Technology Transfer workshops
  - One-on-one technical assistance to identify and prioritize cost-effective methane emission reduction opportunities
- **Annual record of partner voluntary actions and methane savings**

Technical Information

Project Demonstrations

Workshops



Annual Reports

Benefits to Participation

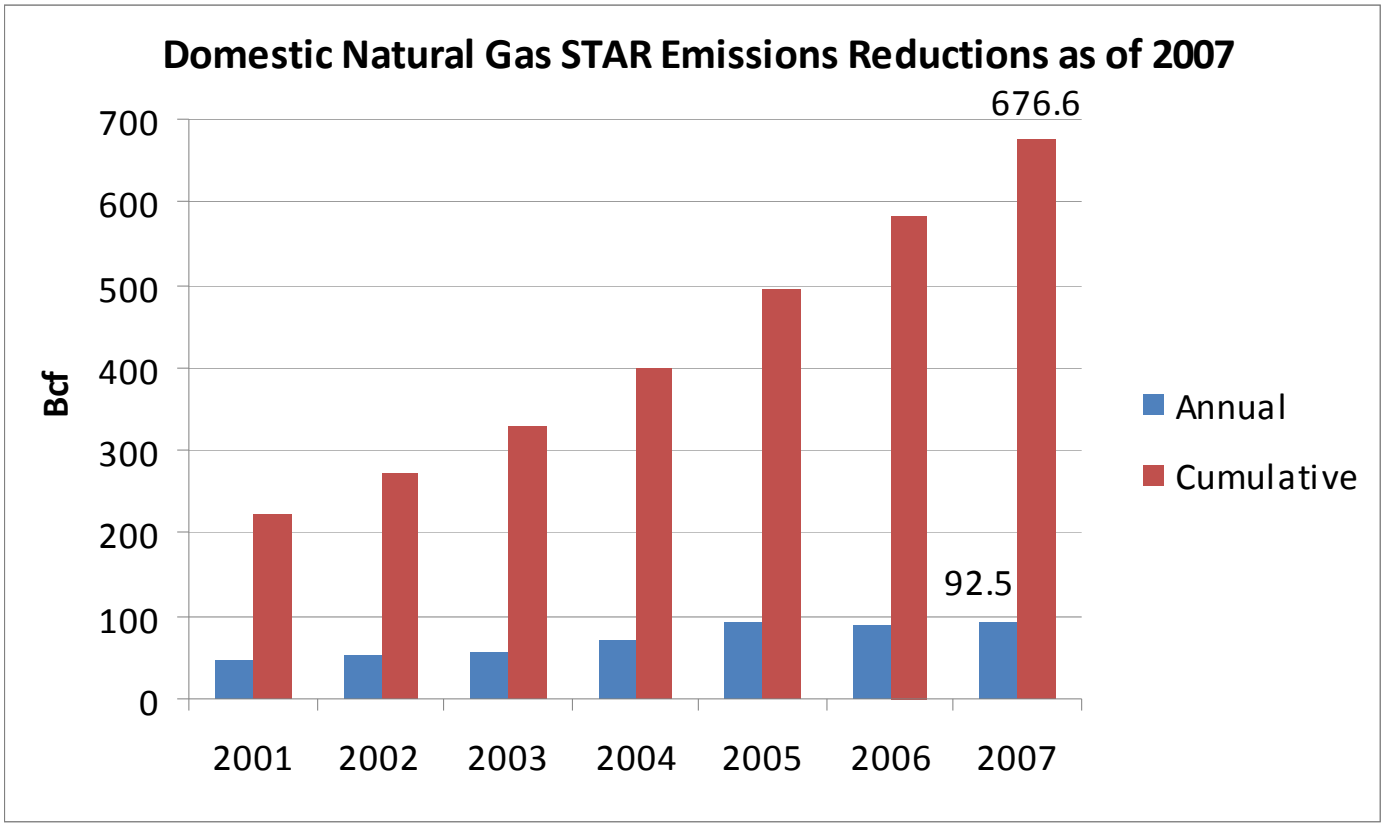
- **Save time identifying the "right" technologies and practices to reduce methane emissions and increase revenue**
  - Technical information and economic analyses based on partner companies' field experiences
  - One-on-one assistance to identify and prioritize cost-effective projects appropriate for a company's operating environment
- **Build network with industry peers, draw upon their experience and success**
  - Sector specific Technology Transfer Workshops and Annual Implementation Workshops
- **Minimal resources required to administer the Program—these are provided:**
  - Standardized forms and default emission values
  - Data collection software and online reporting
  - Gas STAR technical support staff
- **Enhanced corporate reputation**
  - Public recognition and easy methods to quantify environmental benefits
- **Voluntary record of reductions and benchmarking reports detailing accomplishments**

Key Steps to Participation

- **Step 1: Sign the Memorandum of Understanding (MOU)** and market Gas STAR internally—develop a supportive corporate environment from the beginning.
- **Step 2: Submit an Implementation Plan** outlining how Gas STAR will be incorporated into company operations.
- **Step 3: Participate in the Gas STAR Program** based on corporate goals and resources, act on cost-effective methane emission reduction opportunities, attend workshops, and report activities and accomplishments.
- **Step 4: Submit annual progress reports** (after one full year of participation) documenting the previous year's achievements.

Accomplishments

- **Through participation in the Natural Gas STAR Program, partners reduced methane emissions by 92.5 Bcf in 2007**
  - 677 Bcf in cumulative reductions since 1993



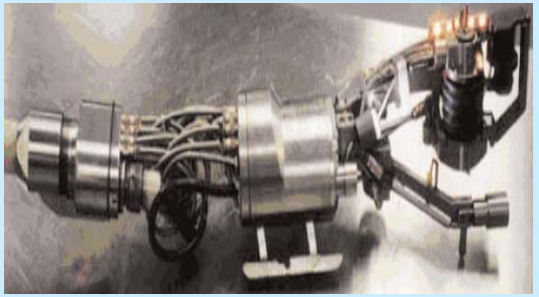
Consolidated Edison Case Study
(Joined 1993)

Program Implementation to Ensure Success

- Natural Gas STAR became a focal point for open communication and teamwork which was one way to put corporate environmental policy into action
- Highly successful in implementing and advocating through technology transfer workshops the benefits of cast iron pipe replacement and flexible pipe lining methods

Examples: Key Achievements and Contributions

- Development and use of Cast Iron Joint Sealing Robot (CISBOT) since 2000 to seal leaking joints with an anaerobic sealant
  - Prevents service disruption, allows minimal excavation
  - Reduces pipeline repair costs by 30 to 40%
- Participated in workshops, generously shared successes
- Achieved multiple Gas STAR awards including a Continuing Excellence award in 2005



Resources and Contact Information

- Learn more about Natural Gas STAR, visit: **epa.gov/gasstar**
- Detailed information on recommended technologies and practices: **epa.gov/gasstar/tools/recommended.html**
- Gas STAR forms including MOU, Implementation Plan, and Annual Reporting forms: **epa.gov/gasstar/tools/program-forms.html**
- Additional information on implementing the Natural Gas STAR Program: **epa.gov/gasstar/guidelines/index.html**

Contact Information

- **Jerome Blackman**
  (202) 343-9630
  blackman.jerome@epa.gov
- **Carey Bylin**
  (202) 343-9669
  bylin.carey@epa.gov
- **Roger Fernandez**
  (202) 343-9386
  fernandez.roger@epa.gov
- **Suzie Waltzer**
  (202) 343-9544
  waltzer.suzanne@epa.gov